



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

09/811,326

03/16/2001

Larry W. Fullerton

TDCO:012

7179

44654

7590

12/28/2004

SPRINKLE IP LAW GROUP  
1301 W. 25TH STREET  
SUITE 408  
AUSTIN, TX 78705

EXAMINER

NGUYEN, DUNG X

ART UNIT

PAPER NUMBER

2631

DATE MAILED: 12/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/811,326

Applicant(s)

FULLERTON ET AL.

Examiner

Dung X Nguyen

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 March 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>4</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless –*

*(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

*(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.*

2. **Claims 1 – 6 are rejected** under 35 U.S.C. 102(b) as being anticipated by Bar-David (US patent # 5,596,601).

Regarding claim 1, Bar-David discloses (figure 4):

- A transmitter circuitry configured to transmit a plurality of pulses into a multipath propagation medium (column 5, lines 22 - 37);
- Encoder (410) corresponding to a transmitter code-circuitry coupled to the transmitter circuitry, the transmitter code-circuitry configured to code the plurality of pulses (column 5, line 60 to column 6, line 11) so as to improve the output pulse-rate of the transmitter circuitry (column 2, line 63 to column 3, line 4 and column 4, lines 30 – 34) (increasing the information rate means improving the output rate).

Regarding claim 2, Bar-David discloses (figure 4):

- An antenna (485);
- A transmitter circuitry configured to provide a plurality of code pulses (column 5, lines 31 – 67), the plurality of code pulses selected so as to improve the output pulse-rate of the transmitter circuitry (column 3, lines 28 – 32, column 2, line 63 to column 3, line 4 and column 4, lines 30 – 34, increasing the information rate means improving the output rate);
- Multipliers (445, 450) corresponding to a multiplier circuitry coupled to the transmitter circuitry, the encoder (410), and the antenna (485), the multiplier circuitry (445, 450) configured to multiply of output pulses with a corresponding pulse in the plurality of code pulses (column 5, line 60 to column 6, line 3), and to provide the resulting product to the antenna (485).

Regarding claim 3, Bar-David discloses (figures 4 and 5):

- A transmitter circuitry configured to provide a plurality of output pulses to a propagation medium (column 5, lines 31 – 59), the transmitter circuitry including encoder (410) corresponding to a transmitter code-circuitry configured to code the plurality of output pulses so as to improve the output pulse-rate of the transmitter circuitry (column 2, line 63 to column 3, line 4 and column 4, lines 30 – 34, increasing the information rate means improving the output rate);
- A receiver circuitry (see figure 5) configured to receive the plurality of output pulses from the propagation medium, the receiver circuitry including receiver code-circuitry (540, 545) configured to decode the plurality of output pulses (column 7, lines 13 – 17).

Regarding claim 4, Bar-David discloses (figure 4):

- Providing a transmitter circuitry configured to provide a plurality of output pulses (column 5, lines 31 – 67)
- Providing an encoder (410) corresponding to a transmitter code circuitry; and

- Coding the plurality of output pulses so as to improve the output pulse-rate of the RF apparatus (column 2, line 63 to column 3, line 4 and column 4, lines 30 – 3, increasing the information rate means improving the output rate).

Regarding claim 5, Bar-David discloses (figures 4):

- Providing an antenna (block 485);
- Providing a transmitter circuitry configured to supply a plurality of code component selected so as to improve the output pulse-rate of the RF apparatus (column 5, line 22 to column 6, line 59, column 2, line 63 to column 3, line 4 and column 4, lines 30 – 34, increasing the information rate means improving the output rate);
- Encoder (block 410) for coding the plurality of output pulses by using a plurality of code components selected so as to improve the output pulse-rate of the RF apparatus (column 3, lines 28 – 32, column 2, line 63 to column 3, line 4 and column 4, lines 30 – 34, increasing the information rate means improving the output rate);
- Multipliers (455, 450) for multiplying each of the plurality of output pulses with a corresponding component in the plurality of code components to provide a plurality of product signals (column 5, line 63 to column 6, line 3);
- Supplying each of the plurality of product signals to the antenna (485).

Regarding claim 6, Bar-David discloses (figures 4 and 5):

- Providing a transmitter circuitry configured to provide a plurality of output pulses to a propagation medium (column 5, lines 31 – 59);
- Encoder (block 410 of figure 4) for coding the plurality of output pulses, by using an encoder (block 410 of figure 4) corresponding to a transmitter code –circuitry that supplies a plurality of code pulses configured to improve the output pulse rate of the transmitter circuitry (column 2, line 63 to column 3, line 4 and column 4, lines 30 – 34, increasing the information rate means improving the output rate);
- Providing a receiver circuitry (block 500 of figure 5) configured to receive the plurality of output pulses from the propagation medium (column 6, line 62 to column 7, line 67).

Art Unit: 2631

3. **Claims 1 – 6 are also rejected** under 35 U.S.C. 102(e) as being anticipated by Cafarella et al. (US patent # 6,473,449 B1).

Regarding claim 1, Cafarella et al. discloses (figure 8):

- Transmitter circuitry configured to transmit a plurality of pulses into multipath propagation medium (column 1, lines 56 – 61 and column 9, lines 53 - 54); and
- Blocks 64, 66, and 70 corresponding to a transmitter code-circuitry coupled to the transmitter circuitry, the transmitter code-circuitry configured to code the plurality of pulses (column 18, line 39 to column 19, line 5 and column 9, lines 53 - 54) so as to improve the output pulse-rate of the transmitter circuitry (column 18, lines 50 – 52, increasing the data rate means improving the output rate).

Regarding claim 2, Cafarella et al. discloses (figure 8):

- An antenna (80);
- Transmitter circuitry configured to provide a plurality of code pulses (abstract and column 7, lines 61 – 65);
- Blocks 64, 66, and 70 corresponding to a code circuitry configured to supply a plurality of code pulses, the plurality of code pulses selected (column 7, lines 61 – 63) so as to improve the output pulse-rate of the transmitter circuitry (abstract and column 18, lines 47 – 52, increasing the data rate means improving the output rate);
- Multiplier circuitry coupled to the transmitter circuitry the code circuitry, and the antenna the multiplier circuitry configured to multiply output pulses with a corresponding pulse in the plurality of code pulses, and to provide the resulting product to the antenna (abstract and column 9, lines 47 – 52, increasing the data rate means improving the output rate).

Regarding claim 3, Cafarella et al. discloses (figures 8 and 12):

- Transmitter circuitry configured to provide a plurality output pulses to a propagation medium, the transmitter circuitry including transmitter code-circuitry configured to

- code the plurality of output pulses so as to improve the output pulse-rate of the transmitter circuitry (abstract, column 7, lines 61 – 63, and column 18, lines 47 – 52, increasing the data rate means improving the output rate); and
- Receiver circuitry configured to receive the plurality of output pulses from the propagation medium (see figure 12), data decoder (block 132 of figure 12) corresponding to a receiver code-circuitry configured to decode the plurality of output pulses (column 21, lines 33 – 38).

Regarding claim 4, Cafarella et al. discloses (figure 8):

- Providing a transmitter circuitry configured to provide a plurality of output pulses (abstract and column 7, lines 61 – 63);
- Providing a code circuitry (modules 64, 66, 70); and
- Coding the plurality of output pulses so as to improve the output pulse-rate of the RF apparatus (abstract, column 7, lines 61 – 63, and column 18, lines 48 – 52, increasing the data rate means improving the output rate).

Regarding claim 5, Cafarella et al. discloses (figure 8):

- Providing an antenna (80);
- Providing a transmitter circuitry (74, 78) configured to supply a plurality of output pulses (abstract and column 7, lines 61 – 63);
- Coding the plurality of output pulses by using a plurality of code components selected so as to improve the output pulse-rate of the RF apparatus (abstract, column 7, lines 61 – 63, and column 18, lines 48 – 52, increasing the data rate means improving the output rate);
- Multiplying each of the plurality of output pulses with a corresponding component in the plurality of code components to provide a plurality of product signals (column 9, lines 47 – 52); and
- Supplying each of the plurality of product signals to the antenna (column 9, lines 53 – 57).

Regarding claim 6, Cafarella et al. discloses (figures 8 and 12):

- Providing a transmitter circuitry (blocks 74, 78 of figure 8) configured to supply a plurality of output pulses (abstract and column 7, lines 61 – 63);
- Coding the plurality of output pulses by using a plurality of code components selected so as to improve the output pulse-rate of the RF apparatus (abstract, column 7, lines 61 – 63, and column 18, lines 47 – 52, increasing the information rate means improving the output rate);
- Providing a receiver circuitry configured to receive the plurality of output pulses from the propagation medium (see figure 12 and column 1, lines 56 – 60); and
- Data decoder (block 132 of figure 12) corresponding to a receiver code-circuitry configured to decode the plurality of output pulses (column 21, lines 33 – 38).

4. **Claims 1, 3, 4, and 6 are also rejected** under 35 U.S.C. 102(b) as being anticipated by Dayton et al. (US patent # 6,473,449 B1).

Regarding claim 1, Dayton et al. discloses (figures 1):

- A transmitter circuitry configured to transmit a plurality of pulses into a multipath propagation medium (abstract and column 3, line 61 to column 4, line 11);
- Encoder (30 of figure 1) corresponding to a transmitter code-circuitry coupled to the transmitter circuitry, the transmitter code-circuitry configured to code the plurality of pulses so as to improve the output pulse-rate of the transmitter circuitry (column 2, line 59 to column 3, line 10 and column 1, lines 6 - 16).

Regarding claim 3, Dayton et al. discloses (figure 1):

- A transmitter circuitry configured to provide a plurality of output pulses to a propagation medium (abstract and column 3, line 61 to column 4, line 11), the transmitter circuitry including encoder (30 of figure 1) corresponding to a transmitter code-circuitry configured to code the plurality of output pulses so as to improve the



output pulse-rate of the transmitter circuitry (column 2, line 59 to column 3, line 10 and column 1, lines 6 - 16); and

- A receiver circuitry configured to receive the plurality of output pulses from the propagation medium, the receiver circuitry including decoder (44 of figure 1) corresponding to a receiver code-circuitry configured to decode the plurality of output pulses (column 6, lines 21 – 32).

Regarding claim 4, Dayton et al. discloses (figure 1):

- Providing a transmitter circuitry configured to provide a plurality of output pulses (abstract and column 3, line 61 to column 4, line 11);
- Providing an encoder (30 of figure 1) corresponding to a transmitter code-circuitry;
- Coding the plurality of output pulses so as to improve the output pulse-rate of the radio-frequency apparatus (column 2, line 59 to column 3, line 10 and column 1, lines 6 - 16).

Regarding claim 6, Dayton et al. discloses (figure 1):

- Providing a transmitter circuitry configured to provide a plurality of output pulses to a propagation medium (abstract and column 3, line 61 to column 4, line 11);
- Coding the plurality of output pulses, by using an encoder (30 of figure 1) corresponding to a transmitter code-circuitry that supplies a plurality of code pulses configured to improve the output rate of the transmitter circuitry (column 2, line 59 to column 3, line 10 and column 1, lines 6 - 16);
- Providing a receiver circuitry configured to receive the plurality of output pulses from the propagation medium (column 6, lines 21 – 32); and
- Decoding the plurality of output pulses by using a decoder (block 44 of figure 1) corresponding to a receiver code-circuitry (column 6, lines 21 – 32).

***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

*US patent documents:*

Campana, Jr. US patent # 5,742,644) discloses a receiving circuitry for receiving serially transmitted encoded information.

Dunn et al. (US patent # 4,761,796) discloses a high frequency spread spectrum communication system terminal.

Weathers et al. (US patent # 4,513,288) discloses a group-complementary code sets for implementing pulse-compression processing with optimum a periodic autocorrelation and optimum cross-correlation properties.

*Other publications:*

Fellow et al., "Experimental Qualification of Voice Transmission Quality of Mobile-Sattelite Personal Communications Systems". IEEE Journal on Selected Areas in Communications, vol. 13, no. 2, February 1995, pp.458 – 464.

Goodman et al., "Spread-Spectrum Mobile Ratio with Variable-Bit-Rate Speech Transmission". IEEE Transactions on Communications, vol. 30, no. 3, March 1982, pp. 531 – 538.

***Contact Information***

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (703) 305-4892. The examiner can normally be reached on Monday through Friday from 8:30 AM to 17:30 PM.

Art Unit: 2631

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (703) 306-3034. The fax phone numbers for this group is (703) 872-9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3800.

DXN

July 29, 2004

  
MOHAMMED GHAYOUR  
SUPERVISORY PATENT EXAMINER